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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/509,409	09/23/2004	Christoph Gerard August Hoelen	NL 020264	8032
24737	7590	03/05/2007	EXAMINER	
PHILIPS INTELLECTUAL PROPERTY & STANDARDS			LEE, Y MY QUACH	
P.O. BOX 3001			ART UNIT	PAPER NUMBER
BRIARCLIFF MANOR, NY 10510			2885	
SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE		
2 MONTHS	03/05/2007	PAPER		

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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/509,409

Filing Date: September 23, 2004

Appellant(s): HOELEN ET AL.

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John C. Fox  
For Appellant

**EXAMINER'S ANSWER**

**MAILED**

**MAR 05 2007**

**GROUP 2600**

This is in response to the appeal brief filed December 12, 2006 appealing from the Office action mailed October 05, 2006.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is incorrect. A correct statement of the status of the claims is as follows:

This appeal involves claims 1 to 3, 7 to 9 and 13 to 16.

Claims 4 to 6 have been canceled.

Claims 10 to 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 17 to 20 are allowed.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

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**(8) Evidence Relied Upon**

2003/0137821 (Gotoh et al.)

6,672,734 (Lammers)

Web page [http://en.wikipedia.org/wiki/Reflection\\_%28physics%29](http://en.wikipedia.org/wiki/Reflection_%28physics%29) "Reflection (physics)" from Wikipedia, the free encyclopedia, pp. 1-3.

Newly Revised and Updated Random House Webster's College Dictionary.

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 to 3, 7, 8, 13, 15 and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by Gotoh et al.

Gotoh et al. show a light emitting panel (10) comprising a front wall (16), a rear wall (17) situated opposite to the front wall, a first edge surface (12, 34) being light transmitted, a second edge surface (14) opposite the first edge surface such that the second edge surface is reflecting with respect to light inside the panel, the surface of the second edge surface having a specularly reflecting material (paragraph 0050, lines 9 to 10), at least a first light source (22) associated with the first edge surface, the light source comprising at least two light emitting diodes (paragraph 0050, line 14) with different light emission wavelengths (red 22a, green 22b or blue 22c), light originating from the first light source incident on the first edge surface and distributed in the panel, the panel widens over a widening section from the first edge surface in a direction towards the second edge surface (figures 1B, 1C, 2B, 2C ...), the rear wall provided over the

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widening section with a multiplicity of steps (18) of which a surface facing the front wall is substantially parallel to the front wall, a further surface (19) of the steps having an angle  $\beta$  with respect to a normal on the front wall such as 37 degrees which is within the range of -48 degrees to 48 degrees, wherein the ratio of the surface area (T1) of the first edge surface and the largest cross section (T2) in the panel substantially parallel to the first edge surface is 1.9 (paragraph 0053, lines 12 to 14) which satisfies the relation as claimed in claims 2 and 3, and a display device comprising a liquid crystal display (2).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gotoh et al. in view of Lammers (prior art previously cited).

Gotoh et al. disclose the invention substantially as claimed with the exception of having the front wall provided with a translucent diffuser.

Lammers teaches that it is known in the art to have the front wall provided with a translucent diffuser.

It would have been obvious to one skilled in the art to provide the front wall of Gotoh et al. with a translucent diffuser, as shown by Lammers, to diffuse and uniform the light coupled out from wall.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gotoh et al. in view of Lammers (prior art previously cited).

Gotoh et al. disclose the invention substantially as claimed with the exception of having the light emitting diode at least 5 lm.

Lammers teaches that it is known in the art to use light emitting diode having at least 5 lm (column 9, lines 2 to 3) in light emitting panel display device.

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It would have been obvious to one skilled in the art to provide the light emitting diode of Gotoh et al. with at least 5 lm, as shown by Lammers, for the advantage of enabling the light to be coupled into the light emitting panel with a higher efficiency, hardly emitting heat as well as issuing detrimental radiation, and to overall provide a compact illumination system.

#### **(10) Response to Argument**

##### Argument I

Appellant argues that Gotoh fails to disclose all of the elements of claim 1, Gotoh does not anticipate claim 1 because Gotoh does not mention that surface 14 is either specularly or diffusively reflecting. Gotoh merely states that surface 14 is "highly reflecting". This could mean that surface 14 is specularly reflecting, or it could mean that surface 14 is diffusely reflecting, but "highly reflecting" compared to other diffusely reflecting surfaces.

According to Appellant's recently submitted evidence regarding the definition of reflection (physics) from Wikipedia, free encyclopedia of December 12, 2006, reflection of light may be specular (that is mirror-like) or diffuse (that is not retaining the image, only the energy) depending on the nature of the interface ..... The law of reflection states that  $\theta_i = \theta_r$  or in other words, the angle of incidence equals the angle of reflection (page 1 of the evidence) and when light strikes a specularly reflecting surface, the angle of incidence equals the angle of reflection. When light strikes a rough or granular surface, it bounces off in all directions due to the microscopic irregularities of the interface. Thus, an image is not formed and this is called diffuse reflection (page 2 of the evidence, fourth paragraph).

In view of this evidence provided by the Appellant that "reflection of light may be specular or diffuse" and Appellant's argument that "this could mean that surface 14 of Gotoh is specularly reflecting, or it could mean merely that the surface 14 is diffusely reflecting but "highly reflecting" comparing to other diffusely reflecting surfaces" as stated on lines 3 to 6 of page 7 of the Appeal Brief, the surface 14 (paragraph 0050, line 2) having a highly reflecting material (paragraph 0050, lines 9 to 10) of Gotoh indeed provides a light reflection that is either specular or diffuse since the nature of the reflecting material has the ability of reflecting the beams of light or exhibits the phenomenon of reflecting the light wave that is being incident on the reflection surface and this light reflection may be reflected in a specular or diffuse manner

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according to the Appellant's evidence. It should be noted that Appellant merely claims that "the surface of the second edge surface is specularly or diffusely reflecting or is providing with a specularly or diffusely reflecting material" not both specularly and diffusively reflecting. All Gotoh needs to meet this claimed language is to satisfy one of the limitations, and since the reflecting material of Gotoh provides either a specular or diffusively reflecting, the claimed language is therefore met. Accordingly, Gotoh shows all of the limitations as claimed and therefore anticipates claim 1.

With regards to the other types of reflection, it is irrelevant because they are not applicable to the subject at issue in this application.

With respect to claims 2 and 3, Appellant's attention is directed to paragraph 0053, lines 12 to 14 of Gotoh, where the descriptions show that the ratio  $S_{lcs}/S_l$  of the surface area  $S_l$  of the first edge surface and the largest cross section  $S_{lcs}$  in the light emitting panel is 1.9 mm which satisfies the relation of  $1 < S_{lcs}/S_l < 10$  and  $1.5 < S_{lcs}/S_l < 3$ .

With respect to claims 7 and 8, Appellant's attention is directed to paragraph 0049, lines 24 and paragraph 0063, lines 20 of Gotoh, where the descriptions show that the angle  $\beta$  is 40 degrees and 37 degrees which are within the range of greater than 0 degree and -48 degrees and less than 48 degrees satisfying the relation of  $-48 \leq \beta \leq 48$  and  $0 \leq \beta \leq 48$ .

With respect to claims 13, 15 and 16, there are no arguments presented by the Appellant, it is conceded that rejection of these claims is proper.

#### Argument II

With respect to claim 9, Appellant argues that Gotoh does not teach a translucent diffuser, Lammers discloses a polarizing diffuser 28, and nowhere Lammers describes the diffuser 28 as a translucent diffuser nor does Lammers suggest that a translucent diffuser could be substituted for the polarizing diffuser.

It should be noted that according to the Random House Webster's College Dictionary, a diffuser is defined as (1) thing that diffuses or (2) any of a variety of translucent materials for filtering glare from the light source. In view of these definitions, the diffuser is indeed "a translucent diffuser" since the nature of the diffuser encompasses the characteristic of the translucent material. Accordingly, the diffuser of Lammers meets the language of "translucent

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diffuser" as claimed and it can be substituted for the polarizing plate of Gotoh since both references are directed to the same field of endeavor, a liquid crystal display using a polarizer, to uniformly diffuse the light coupled out of the front wall to thereby providing a uniform illuminated liquid crystal display.

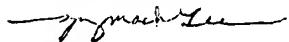
With respect to claim 14, Appellant states that this claim is patentable by virtue of its dependency on claims 1 through 13 for the reasons already advanced with respect to claim 1. However, this claim 14 is not allowed in view of the reasons as stated in the Response to Argument with respect to claims 1 to 13 and the art rejection as stated in the Grounds of Rejection.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

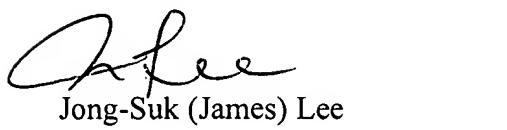


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